



PROJECT OVERSIGHT PROGRAM

Part I: Project Oversight Administration

State of Missouri
Office of Information Technology

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Table of Contents

Executive Summary	1
Chapter 1: Introduction to Missouri Project Oversight.....	2
Why Project Oversight?	2
Project Oversight Definition	3
Program Scope	4
Program Approach	4
Program Benefits.....	5
Chapter 2: Terms and Definitions.....	7
Chapter 3: Project Oversight Program Administration.....	8
Program Relationships	8
Program Governance.....	9
Who Performs Oversight.....	10
Roles and Responsibilities	11
Chapter 4: Program Methodology.....	13
Project Oversight Functions	13
Rules of Thumb.....	13
Oversight Project Model	14
Focus on Project Artifacts	14
Project Model Organization	15
Oversight Processes & Templates.....	16
Estimation of Ongoing Oversight	19

EXECUTIVE SUMMARY

The Missouri Project Oversight Program Manual presents the guidance and approach for implementation of the Missouri Project Oversight Program including the background, definition, and justification for the program as well as the processes, templates, and associated narratives necessary to support program implementation. The manual presents this information in two parts:

- Part I – Project Oversight Program Administration
- Part II – Project Oversight Processes and Templates

Part I - Project Oversight Program Administration provides the introduction to the Missouri Project Oversight Program, defines project oversight, defines program scope and approach, and identifies the program benefits. In addition, Part I provides information on program relationships, program governance, and the program methodology including introduction to the processes and templates used during program implementation.

Part II – Project Oversight Processes and Templates includes an overview of the project oversight methodology, the process models and detail for the oversight processes as well as specific templates, which are completed during the oversight processes.

This document is part of the continuing development of Missouri's Project Oversight Program, developed in concert with the Missouri Office of Information Technology (OIT) and the Missouri Information Technology Advisory Board (ITAB). National Systems & Research Co. (NSR) has been retained to assist in the coordination, document design, process development, and overall production of this document.

*Project Oversight is the best
kept secret in Missouri.*

GERRY WETHINGTON
CIO STATE OF MISSOURI
OFFICE OF INFORMATION TECHNOLOGY

CHAPTER 1: INTRODUCTION TO MISSOURI PROJECT OVERSIGHT

Chapter 1 offers an introduction to the Missouri Project Oversight Program. The Chapter identifies the fundamental rationale for an effective project oversight program, the definition of project oversight, the scope of the program, the program approach and identification of the program benefits to the State of Missouri.

WHY PROJECT OVERSIGHT?

The State of Missouri's IT community through the Information Technology Advisory Board (ITAB), State Chief Information Officer (CIO) and the Office of Information Technology (OIT) have established a structured methodology of Project Oversight designed as a service program to help ensure the successful implementation of information technology (IT) projects in the state of Missouri. The establishment of this program is the result of goals set forth in the State's IT Strategic Plan pertaining to the effective and efficient use of IT within the state.

Statistics regarding national failure rates of IT-related projects are staggering. At the turn of the century, IT advisory groups such as [Gartner Group](#), [Meta Group](#), and the [Standish Group](#) reported the following regarding IT-related project performance:

- More than 80% of IT-related projects are late, over budget, lacking in functionality or never delivered
 - 30% of projects are cancelled
 - 75% of projects are late
 - Less than 2/3 of the original scheduled features/functions make it to the end product
 - Cost overruns average nearly 200%
 - Schedule overruns average over 200%

Public sector and state government IT projects are not protected from these project failure warning signs as evidenced by a January 2003 report by Washington Technology a leading source of intelligence for government systems integrators. After reviewing 15 major IT projects in seven of Virginia's nine secretariats, auditors found that the state had wasted at least \$75 million and incurred an additional \$28 million in cost overruns.

Project Oversight provides many important service components for protecting Missouri IT-related projects from becoming statistics such as those above. Project Oversight is designed to be a non-intrusive approach that doesn't concentrate on finding fault (as audits do) but is designed to work in the background and monitor the overall dependencies of any large project. The key components to any project's success are to reduce project risks and ensure that the intended business result be completed on time and on budget.

Project Oversight maintains an independent "big picture" view in order to be both predictive and proactive to the many issues that impact a project. Essentially, project oversight facilitates project success by assessing the project against generally accepted project management guidelines and seeking to minimize project risk through assessment and mitigation recommendations. Project oversight is designed to provide the project sponsors and executive management with validated and unbiased information about a project's true status, risks, and performance trends, quality of deliverables and forecast for completion.

Through continuous communications with project management, project oversight acts as a check-and-balance for project management processes such as risk management, quality management, cost management, resource management, change management, contract management and implementation. Project Oversight helps ensure that the right things are done, and are done correctly.

This program provides the basis for the development of a project oversight methodology which, when realized, will fulfill its mission of bringing about a higher degree of quality and efficiency in Missouri's business and technology projects, and provide an efficient and effective means to share "best practices", "lessons learned" and other information on project management and oversight with the state's IT community.

PROJECT OVERSIGHT DEFINITION

This document describes the State of Missouri's Project Oversight Program. It also provides clarification of the various roles and responsibilities of project oversight in relationship to other management disciplines such as project management, risk management and cost management. Understanding the different role perspectives between project management and project oversight is critical to understanding the oversight program. Table 1 illustrates the key roles and the perspectives for both project management and project oversight.

Table 1. Project Oversight Versus Project Management

ROLE	PROJECT MANAGEMENT	PROJECT OVERSIGHT
<i>Project View</i>	Detailed task level view	Product/Deliverable and Process view
<i>Focus</i>	Direct project related activities	Monitor: ✓ Outside influences impacting project
<i>Quality Assurance Function</i>	✓ Should not perform your own QA ✓ Deliverable accuracy which points to quality of process execution	✓ Independent 3 rd party QA ✓ Deliverable content which points to quality process existence
<i>Key Activities</i>	Provide: ✓ Planning ✓ Leadership ✓ Organization ✓ Control	Assist: ✓ Maintaining "big picture" view of project ✓ Maintain project scope ✓ Proactive Problem/Issue Identification & Avoidance ✓ Adding insight into issue prioritization and resolution
<i>Decisions</i>	Decision making authority	Decision support
<i>Additional Activities</i>		Project manager coaching/mentoring

Project management is an integrative endeavor – an action, or failure to take action, in one area will usually affect other areas. The interactions may be straightforward and well understood, or they may be subtle and uncertain. For example, a scope change will almost always affect project cost, but it may or may not affect product quality. These interactions often require trade-offs among project objectives, such

as; sacrificing performance in one area may enhance performance in another. Successful project management requires actively managing these interactions.

Project oversight describes the processes required to ensure that these interactions are being managed successfully, and that the project will satisfy the needs for which it was intended. It stands separate from these other management functions in that it does not have the same front-line direct responsibility for the successful definition and implementation of a project, but rather acts in a check-and-balance capacity to the other functions. It consists of selected actions, dependant upon project oversight levels, to ensure proper outcomes.

In order to develop this oversight program, a common definition and understanding of project oversight is necessary. The definition of project oversight that will be used for this program is:

Evaluating and communicating overall project performance on a regular basis to provide confidence that the project will satisfy the intended business result and be completed on time and on-budget.

PROGRAM SCOPE

The Missouri Project Oversight Program has been developed to support the State's Project Management Program and encompasses all critical Missouri State Government IT projects. Missouri State Government has acknowledged the importance of the oversight program by initiating an agreement between OIT and the Division of Budget and Planning in the Office of Administration giving OIT the responsibility to establish a project oversight program and conduct independent project oversight on all critical IT projects within the state.

The Project Oversight methods and tools that have been developed to support this program have been the result of specific pilot project oversight engagements that have primarily focused on software development, but the Missouri Project Oversight Program can easily be adapted to other critical IT engagements. The scope of the Missouri Project Oversight Program involves a defined set of principles and a procedural approach that is fundamentally sound and extends beyond the IT software development project realm. Whether it's a software development, infrastructure improvement, or a packaged software implementation, the MPOP principles can be applied to any type of project with the appropriate modifications of the project tools.

PROGRAM APPROACH

The Information Technology Advisory Board (ITAB) is responsible for adopting statewide information technology policies, standards, procedures, methodologies, IT Architecture and strategic plans for the State of Missouri. ITAB is also responsible for proposing information technology policies and procedures, project management methodologies, an information technology architecture, standards for data management and a strategic information technology management plan.

The ITAB has implemented a standing committee for Project Management to address issues critical to information technology project management in the State. Subcommittees within the Project Management Standing Committee (PMSC) have been established to address the Missouri Project Oversight Program (MPOP), the Missouri Value Assessment Program (MOVAP), Risk Management, and Performance Management. Figure 1 illustrates the ITAB committee relationships that relate to Project Oversight.

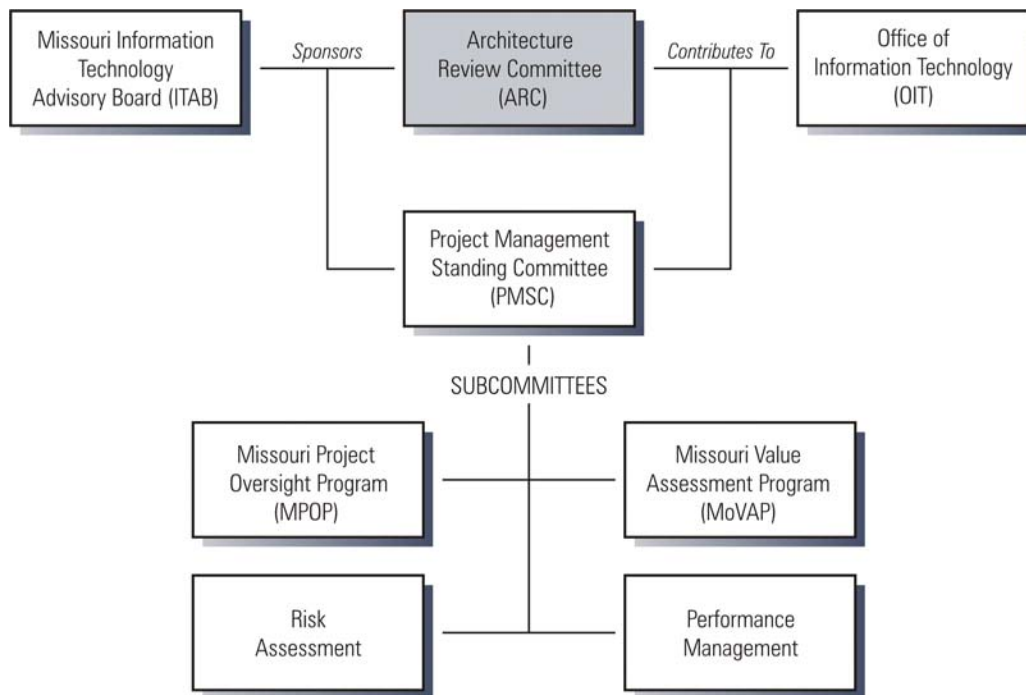


Figure 1. ITAB Committee Relationships

PROGRAM BENEFITS

The IT Strategic Plan identifies a set of values that represent the guiding principles and standards of the Missouri State Government Information Technology community. These values contribute to and support the goals and objectives in the plan. Of those values identified, three relate significantly to the Project Oversight Program and are projected into the development and implementation of the Project Oversight Program. The three values restated are as follows:

- *Accountability:* We are accountable to the citizens of Missouri and will conduct our business in a fiscally responsible manner.
- *Cooperation:* We believe that cooperation between state entities is fundamental to our work and we will consciously strive to share resources and work together.
- *Effectiveness:* We believe the effectiveness of our services is crucial and needs to be balanced with the efficiency of operations.

Oversight can be an honest broker between the customer and the contractor to keep talking and working. It points out shortcomings and employs reports versus day-to-day project minutia (and the pointing of fingers).

JIM WEBER
CIO MO DEPARTMENT OF REVENUE

The Project Oversight Program helps to ensure the effective and efficient utilization of state resources. Oversight of project management will help ensure costs are managed and resources are used to their maximum potential. Essentially, project oversight facilitates project success by assessing project management practices to help ensure that the right things are done, and that things are done right. Project oversight acts as a check-and-balance for project management processes such as risk

management, quality management, cost management, resource management, change management, contract management and procurement management.

More specifically, project oversight operates by verifying or, where appropriate taking direct steps to help ensure that projects:

- Are structured and managed in accordance with the State of Missouri's established standards and best practices
- Are implemented in compliance with all relevant processes, conditions and requirements
- Progress in accordance with approved project plans and requirements
- Achieve defined success factors and obtain expected results

Together the Office of Information Technology and the Information Technology Advisory Board have made integrating the principles of quality into technology projects a top priority by instituting formal project oversight criteria. This program offers a very real opportunity to ensure sound management and stewardship of the state's resources as the states' business and technology community focus on quality initiatives. In general, project oversight is most concerned with those management actions and activities that can reasonably be done and should be done to successfully implement projects in Missouri State Government.

When we had difficulties with our original vendor and had to re-evaluate our contract with them, it was helpful having had NSR involved with our project. Through the Project Oversight process, OIT had been aware of our progress as well as the issues we were dealing with.

GARY LYNDAKER
CIO MO DEPARTMENT OF MENTAL HEALTH

CHAPTER 2: TERMS AND DEFINITIONS

The Information Technology industry has developed its own unique terms for explaining components and functions specific to the industry. These terms have a specific meaning for their users and become a tool for referring to programs, processes, products or technologies that can be extremely complex. Many terms can have multiple meanings and the context that the term is used in is typically critical to understanding the intent of the reference.

A list of terms and conditions used to describe this program and manual set is presented here to improve the reader's understanding of the program. This terminology has been aligned with the terminology already reviewed and accepted by the Missouri State IT Community through the review and acceptance of the Missouri Adaptive Enterprise Architecture Manual.

- *MPOP*: Missouri Project Oversight Program
- *Artifact*: Any form of information (formal documents, spreadsheets, notes, memos, etc) or element of a product/service that is produced in support of a project or as a result of the project execution. This includes organization information, information required by management, project descriptions, product descriptions, and all project deliverables
- *Deliverable*: Project deliverables are a subset of all project artifacts. They are made up of all products that are produced as a direct result of project requirements. While artifacts can include sources of information that support a project, deliverables are only produced through execution of the project.
- *Deliverable Attributes*: For each deliverable listed in the OPM there is associated information that aids in monitoring and evaluating aspects of the deliverable. This includes quality factors, dependencies, responsible party, status, and deliverable requirements.
- *Oversight Baseline Model*: This model provides a superset of all artifacts/deliverables that might possibly be a part of an IT project. This model is used as a checklist to ensure that a project has identified all necessary artifacts/deliverables given its unique characteristics.
- *Oversight Project Model (OPM)*: The key tool used for MPOP, which provides a view of the project that focuses on the project processes and deliverables. This tool allows the oversight manager to monitor the project artifact/deliverable information and provide effective oversight support.
- *Product Component*: The second level in the OPM deliverable hierarchy. A product component is simply a logical grouping of deliverables that serve a common subject area. In the hierarchy, one or more product components make up a product/service.
- *Product/Service*: The ultimate result of project execution. This will typically be application software and supporting hardware, or a service provided through the use of software/hardware. The OPM organizes project deliverables in a hierarchy, with a top level of "Product/Service".
- *Project Model*: A view of a project that organizes and enables management of project information.
- *Quality Factor*: Expected elements that should be found in a project process or deliverable.

CHAPTER 3: PROJECT OVERSIGHT PROGRAM ADMINISTRATION

Chapter 3 identifies the administration aspects of Missouri's Project Oversight Program. The Project Oversight Program includes terminology, processes, templates, organizations, roles, responsibilities, functions, and relationships that define it. This Chapter describes the Project Oversight Program Administration consisting of program relationships and Program Governance including identified roles and a description of the responsibilities specific to the Oversight Program for each of the roles.

PROGRAM RELATIONSHIPS

The Missouri Project Oversight Program does not stand on its own. It has links with other Missouri programs that currently exist or are being developed including the Missouri Project Management Methodology, Missouri Value Assessment Program (MoVAP), Missouri Adaptive Enterprise Architecture (MAEA), Missouri Risk Management Program, and Missouri Performance Management methodology. These initiatives, along with the Project Oversight Program, provide the environment to help the State achieve a high degree of accountability and creditability for proposed business systems; and for project planning, execution and closeout.

Project Oversight helps present the benefits of project management practices to state agency management.

RHONDA HAAKE
MISSOURI DMH
CIMOR PROJECT MANAGER

To ensure that projects are conducted in a disciplined, well-managed and consistent manner, Missouri state government established a Project Management Methodology (PMM) and a reporting process for all information technology projects. The current project management methodology is documented in the *State of Missouri Project Management Best Practices Reference Manual*. This manual and additional program information can be found at <http://oit.mo.gov/business%20solutions/project%20management.html>.

The Missouri Value Assessment Program (MoVAP) is a program to determine the total cost of ownership (TCO) and return on investment (ROI) of projects involving technology-enablement. MoVAP data serves as a direct input into Project Oversight information analysis procedures. More information on MoVAP can be found at <http://oit.mo.gov/business%20solutions/value%20assessment.html>.

Missouri is actively engaged in the development of an enterprise architecture that facilitates business system sharing across departmental lines of responsibility. The Missouri Adaptive Enterprise Architecture (MAEA) provides a consistent strategy for planning and implementing technology solutions throughout state government, ensuring effective use of state resources and money. More information can be found at <http://oit.mo.gov/architecture/architecture.html>.

The risk management program exists to provide a standardized approach to IT project risk assessment for Missouri IT projects. An understanding of project risks is critical to an accurate determination of the level of oversight needed on a project. It is through the provision of risk information that the risk management program supports project oversight. A sample risk assessment and management plan, as applied to the Missouri E-Government program can be found at <http://oit.mo.gov/e-government/E-Gov%20Risk%20Plan.pdf>.

Designed as a management tool to capture a standard set of IT project related statistics, the Missouri Performance Management methodology is currently under development by the Information Technology Advisory Board's Performance Management Committee. It is anticipated that historical project data collected by the MPOP will contribute to improving performance of all levels and areas of project management. Information regarding the status of the Performance Management program can be found at <http://oit.mo.gov/business%20solutions/performance%20management.html>.

PROGRAM GOVERNANCE

The administration of the Missouri Project Oversight Program's processes is governed by a well-defined set of roles, responsibilities and methods. These areas must be well managed to ensure the effectiveness of the Oversight Program on any given project. This section identifies the governance structure for implementation of a project oversight engagement and includes a listing of the key personnel and organizations that typify administration of the project oversight processes. A brief description of the responsibilities of each of the roles identified is provided in the sections that follow.

Figure 2, Missouri Project Oversight Process Governance Structure identifies the standard key roles and management responsibilities when implementing project oversight on critical State of Missouri IT Projects.

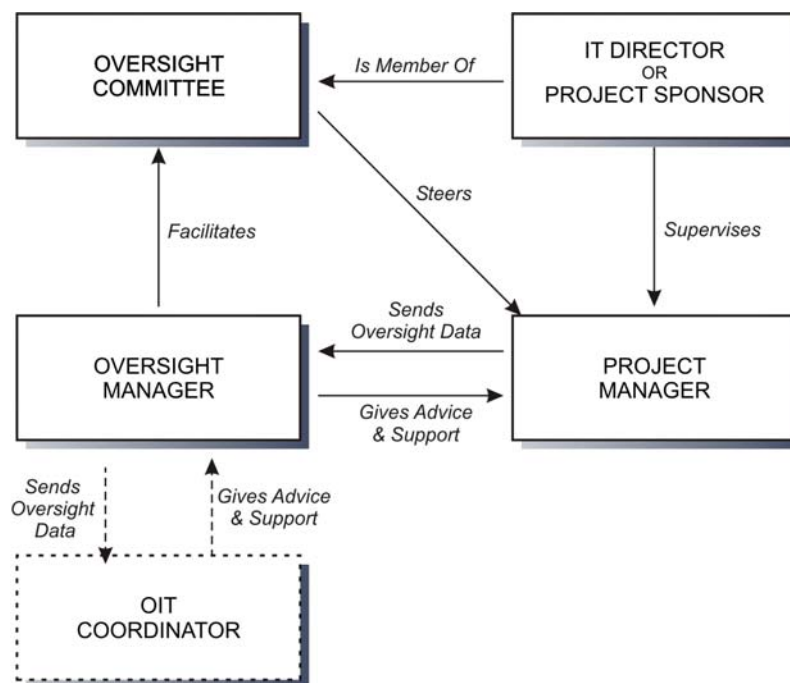


Figure 2 Missouri Project Oversight Process Governance Structure

NOTE: The Project Oversight Processes described in MPOP Part II can be applied to any IT Project regardless of criticality. This governance structure could be adapted to support an individual agency's administration of project oversight.

WHO PERFORMS OVERSIGHT

A key principle of the Missouri Project Oversight Program is that project oversight is an “independent” review and analysis of a given project to determine if the project is on track to be completed within the estimated schedule and cost, follows generally accepted project management best practices, and will satisfy the intended business result. The MPOP framework described throughout this document emphasizes the independent nature of project oversight and the *minimum* project oversight practices and processes that must be in effect to support successful IT projects.

It should be noted that contracting project oversight to a 3rd party or vendor can help ensure independence and that the reports provided to project sponsors and executive management include unbiased information about the project’s true status. However, “*independent*” project oversight does not necessarily mean that oversight must be conducted by consultants (contractors).

Based on the risk, sensitivity, and/or criticality of a given IT project, the oversight function *may* be performed by state staff, but they must not be the same staff that is responsible for the outcome of the project. For example, if a state agency has a Project Management Office (PMO) with a pool of project managers, a project manager of one project could provide oversight of another project not directly under his/her control.

The checklist below provides some preliminary criteria and guidance as to situations when project oversight may be conducted internally by an agency vs. when oversight should be conducted by a 3rd party or vendor. Any answer of “no” should encourage investigating using external oversight support.

- The agency has familiarity with Project Oversight methodology and processes?
- The agency has demonstrated a degree of project management expertise?
 - Project Managers are formally trained and/or certified and have skills in IT project estimating, planning, budgeting, tracking and reporting.
 - Project Management functions are centralized within their department, such as a PMO unit that is independent of the projects themselves.
- The agency has staff to dedicate for a Project Oversight manager?
- The agency has an established software engineering methodology or SDLC to apply to the project? (i.e., OOAD, RUP, RAD, etc.)
- The agency has secured appropriate support for funding and other resources?
- The agency has successfully completed similar engagements of the same size/scope?
- The project has low visibility by entities outside the agency? Such as other state agencies, state citizens, the private sector, Federal Government Agencies.
- The project schedule is very flexible and allows for schedule changes to be made?
- The project is without dependencies on other projects?
- The project has an easily understood problem and solution that is readily achievable?
- The planned technologies within the project comply with the standards and guidelines of the Missouri Adaptive Enterprise Architecture?

The examples in the checklist above are not meant to preclude the possibility of other situations or criteria provided that the party conducting the oversight processes, as detailed in this oversight methodology,

possesses the essential attributes of independence and project management expertise, and they follow the MPOP framework of reporting and communication.

Note: The roles and responsibilities listed in subsequent sections refer to administration of Project Oversight at the project level, not the entire program.

ROLES AND RESPONSIBILITIES

The support of the Project Oversight Program requires the involvement of personnel in a variety of roles and responsibilities. The following provides the narrative description of the roles and responsibilities as identified in the Missouri Project Oversight Program Governance Structure.

Office of Information Technology/Project Oversight Coordinator

OIT actively embraces its responsibility within State government and the IT community to ensure State agencies adopt the policies, architecture, standards and practices needed for successful IT management. Understanding the importance of this role, OIT has taken active responsibility for ensuring a sound oversight framework is in place to support successful planning and execution of IT projects within the State.

Project oversight ensures that appropriate processes and procedures have been established for the monitoring of project progress. Its purpose is to ensure that projects are completed on time, on budget, and satisfy the business objectives of State government. The objective of oversight is to mitigate risks inherent in IT projects. OIT serves in an advisory role to provide guidance and support of the Missouri Project Oversight Program.

Responsibilities specific to the OIT Project Oversight Coordinator include:

- Collection of monthly status reports for all projects receiving oversight services
- Receiving and reviewing annotated oversight reports
- Rollup of all oversight project status for OIT reporting purposes
- Facilitating the application of lessons learned to other business and technology projects
- Managing the vitality of the program including the promotion of MPOP process improvement

Project Oversight Manager

By managing the project oversight processes, the Project Oversight Manager monitors the project's recent past and current results to identify demonstrated performance of the required functions of a project's processes, deliverables and artifacts according to agreed upon quality factors. The Oversight Manager is responsible for monitoring, evaluating and reporting on the following:

- Accurate reporting on the general status of the project
- Accurate reporting on the financial status of the project
- Adherence to the high-level work plan for the project
- The attainment of on-time and on-budget milestones or benchmarks

The oversight manager brings in other information that makes us aware of the products, solutions and resources that are available to us that we wouldn't know about otherwise.

JIM WEBER
CIO
MISSOURI DEPARTMENT OF REVENUE

- The completion of the project and the realization of the expected business goals
- Assessing quality of processes and products

It is also the oversight manager's responsibility to ensure that the oversight process is properly implemented and well communicated to all stakeholders, the project manager, and the oversight committee members. Expectations for project oversight must be clearly set at the outset of the project. It is necessary that the Project Oversight Manager be given sufficient authority to drive the oversight process to ensure its successful implementation through cooperation by all parties.

Project Oversight Committee

The Oversight Committee will be a required decision making body on all projects utilizing the services of MPOP. It is made up of key stakeholders with a vested interest in the outcome of the project. This may include internal agency management, outside agency groups, key user groups, and/or any other organization representative concerned about the project's success. The purpose of the committee is to help steer the direction of the project and provide critical decision-making support as projects risks and issues are reported. The following are the responsibilities identified for the oversight committee:

Project Oversight monthly reports to our Oversight Board have helped assure our business customers of our openness about the project, both in reporting progress and in reporting difficulties. That has led to a level of trust and support that has been a real strength.

GARY LYNDAKER
CIO
MISSOURI DEPARTMENT OF MENTAL HEALTH

- Attend regularly scheduled oversight committee meetings (usually held monthly)
- Monitor project progress as reported by project oversight manager
- Assess and discuss project risks and benefits
- Provide decision making authority at an executive level
- Generate recommended project improvement courses of action as a result of a significant risk event.

It is important that the oversight committee be empowered with executive decision making authority and plays an influential role in the decisions that drive the project. Without this authority, the overall effectiveness of the oversight process will be greatly reduced.

Agency Project Manager

It is the responsibility of the agency project manager to ensure that information developed concerning the quality and effectiveness of the project plan is appropriately evaluated, action plans developed, reports distributed and actions taken. Project communications are primarily the responsibility of the agency project manager because they are the central figure to the project.

The overall execution of the project, production of all deliverables, adherence to schedule, adherence to budget, and management of processes fall into his or her realm of responsibility. While the oversight manager is responsible for the oversight processes, the agency project manager is pivotal to its success or failure. The project manager has an obligation to evaluate and annotate any oversight reports with his or her comments.

CHAPTER 4: PROGRAM METHODOLOGY

The Project Oversight Program is based on an overall methodology including the processes and templates that support it. This Chapter provides a high-level introduction to the methodology and the supporting processes and templates to provide an overall view of the program without moving into the details. The details are provided in Part II of this manual.

PROJECT OVERSIGHT FUNCTIONS

The oversight program plays a quality assurance role. Quality assurance can be defined in many ways and can involve many different ideas and activities in various subject areas. Project oversight quality assurance activities as defined in this program include:

- *Plan:* Initiate the oversight process and develop and/or configure the tools necessary to perform project oversight. Communicate and organize the oversight process and initiate all oversight activities.
- *Monitor:* Using the oversight tools developed during the planning process, monitor all aspects of the project to generate an understanding of the overall project health.
- *Evaluate:* Assess project risks and issues to enable proper business decision making by stakeholders
- *Communicate:* Obtain and disseminate project information to the project manager and other stakeholders to help keep all parties abreast of project issues.
- *Project Manager Support:* Key to successful implementation of the oversight process is building a partnering relationship with the project manager. Support of the project manager will help ensure that all elements of the project receive needed attention.

RULES OF THUMB

The following is a set of general guidelines recommended for the oversight program. These are not necessarily mandatory requirements of project oversight, but they are considered important to oversight success and ultimately project success:

1. For maximum effectiveness and benefit, project oversight should be included at the beginning of the project.
2. Be flexible when implementing the oversight process. As much as possible the oversight process should work in harmony with the established agency environment.
3. Project oversight should be limited to the above functional areas. The oversight manager's activities should not include the design, definition, or creation of system components or project deliverables. This is important because it allows the oversight manager to remain an objective third party participant in the project.
4. It is very important that the oversight program be viewed as a beneficial service to the project as opposed to a watchdog whose only role is to find problems and pinpoint the blame.

5. The oversight manager should become familiar with project processes such as the development lifecycle, procurement, risk assessment, etc. This will better enable him or her to assess project performance and health.

OVERSIGHT PROJECT MODEL

The primary goal for the Project Oversight Program is to provide an external means to view an information technology project in a clear and concise way providing the ability to support the project manager, make decisions, and guide overall project performance. The methodology is centered on the creation of a Project Model for tracking project condition and status that makes project oversight an efficient, repeatable, maintainable, consistent, and flexible process. This goal is not always easily reached on large, complex projects. These projects can involve the efforts of multiple project managers, numerous technical staff members with widely varying expertise, the development of numerous deliverables, the management of remotely located contractors, the implementation of a complicated software development methodology, and the use of unfamiliar technologies.

Project Oversight provides a forum for addressing issues between contractor and state agency, with an unbiased third-party representation.

RHONDA HAAKE
MISSOURI DMH
CIMOR PROJECT MANAGER

These elements of complexity are driven directly or indirectly by requirements that are typically derived from multiple sources (Contract, RFP, Contractor Proposal, Implementation Plan, PAQs, etc.). This Project Oversight

methodology helps to minimize the inherent complexity of the project by providing a means to organize and coordinate the requirements that are found in each of the sources thereby making them more manageable. Again, central to this methodology is a tool, the Oversight Project Model (OPM) that has been developed to provide a single organized source for all project oversight information thereby reducing the information's complexity and communicating the information more effectively. Implementing the OPM greatly enhances the ability of the oversight manager in helping to support the project manager who is making decisions and guiding the overall project.

FOCUS ON PROJECT ARTIFACTS

A key step in successfully performing project oversight is identifying products and services that are measurable and capable of being monitored for performance. This leads to a focus on the project artifacts including documents, software components, models, plans, etc. Artifacts are the tangible aspects of a project, many of which are contractually required as deliverables. They are measurable in regards to quality and completeness by examining their content. In addition, since the ability to develop an artifact implies that work has been performed, they also provide a means to monitor the project's progress by assessing the timeliness of artifact completion compared to scheduled milestones. All areas of a project require the development of artifacts, so it is through the focused attention on artifacts that project performance can be measured and quality assured.

It is important to note that this document will make references to both deliverables and artifacts. While deliverables are actually a type of artifact, they are the key measurable artifacts that will be tracked throughout the project. Because of this, these terms are interchangeable as they are presented here.

PROJECT MODEL ORGANIZATION

The Project Model is the organized collection of all artifacts (products, services, deliverables, etc) that define the project. Because the artifacts can be numerous and can be collected from a number of sources, the Project Model is needed to bring all the artifact information together to provide a clear identification of all products, services and deliverables for the project as a whole. This information is organized in a hierarchy as depicted in Figure 3. The products/services are comprised of a set of components, which are essentially categories under which the various deliverables are listed. This hierarchy of Product/Service to Component to Deliverable is used throughout the Project Model.

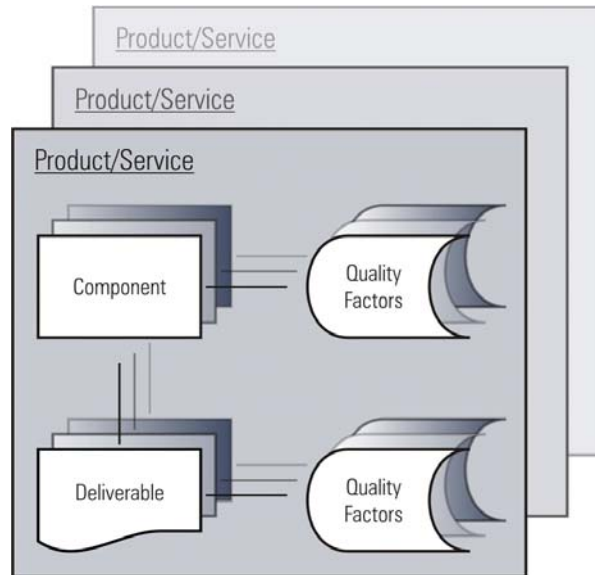


Figure 3. Project Model Structure

Besides providing a clear view of the project, the project model also includes information associated with each deliverable that allows for the ability to monitor it, measure it, and ensure accountability. These are referred to as Artifact Attributes. These include:

Monitor & Measure

- *Dependencies*: Deliverables or other artifacts that must be delivered before this deliverable can be completed
- *Status*: The current state of the deliverable
- *Quality Factors*: Expected elements that should be found in the final deliverable

Accountability

- *Evidence Of Completion*: Evidence that the deliverable has been completed
- *Deliverable Requirements Source*: The document or other source that identified the deliverable
- *Responsible Party*: The person or organization that is responsible for the deliverables development.

All of this information is very important to the oversight methodology. It not only provides the ability to proactively monitor the project performance, but also the ability to identify risk in a timely manner, and perform a first level of quality assurance.

OVERSIGHT PROCESSES & TEMPLATES

The Oversight Methodology includes processes, sub processes, templates, and associated narratives that enable the oversight manager to perform the functions of project oversight to the benefit of Missouri's IT initiatives. The processes and templates covered in Project Oversight Manual Part II, Chapters 1 – 4 are introduced here with a high-level description in the order that follows the flow of the oversight activities.

We are still using the Oversight meetings to monitor our successes.

DAVID BROWN
DEPUTY DIRECTOR
MISSOURI DEPARTMENT OF PUBLIC SAFETY

There are five primary processes that support the Project Oversight Program. These five processes include the Oversight Initiation Process, Oversight Planning Process, Oversight Implementation Process, Oversight Closeout Process, and the Oversight Program Vitality Process. Figure 4, Project Oversight Methodology Overview presents the

five primary processes of the oversight methodology. The processes flow into each other in waterfall fashion starting with Oversight Initiation and ending with the Oversight Vitality Process feeding process improvement back into the program.

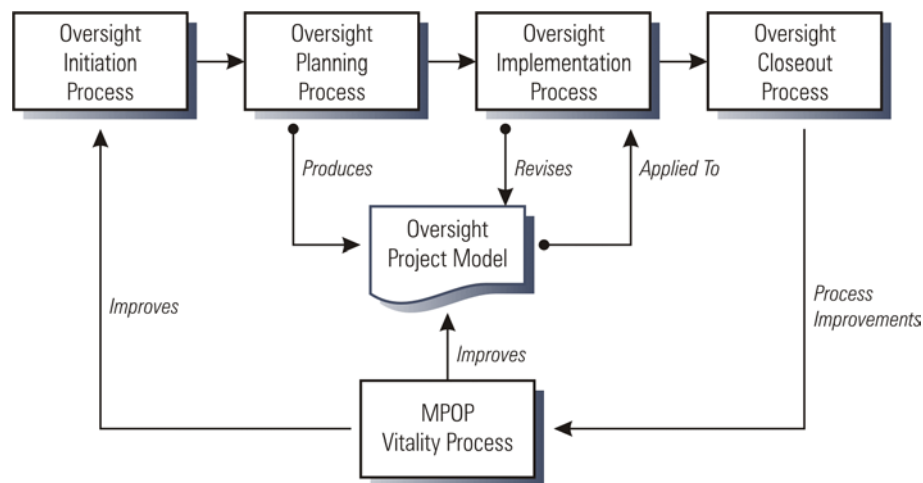


Figure 4. Project Oversight Methodology Overview

Each of these five primary processes is supported by a number of sub processes and templates that facilitate execution of the Project Oversight Program. Figure 4, Oversight Processes and Templates, identifies the sub processes and templates including their association with other processes and templates.

The detailed process models and templates including associated narratives are presented in MPOP Part II Chapters 1-5 along with the associated detailed narratives. The following provides a high-level introduction of the five primary processes.

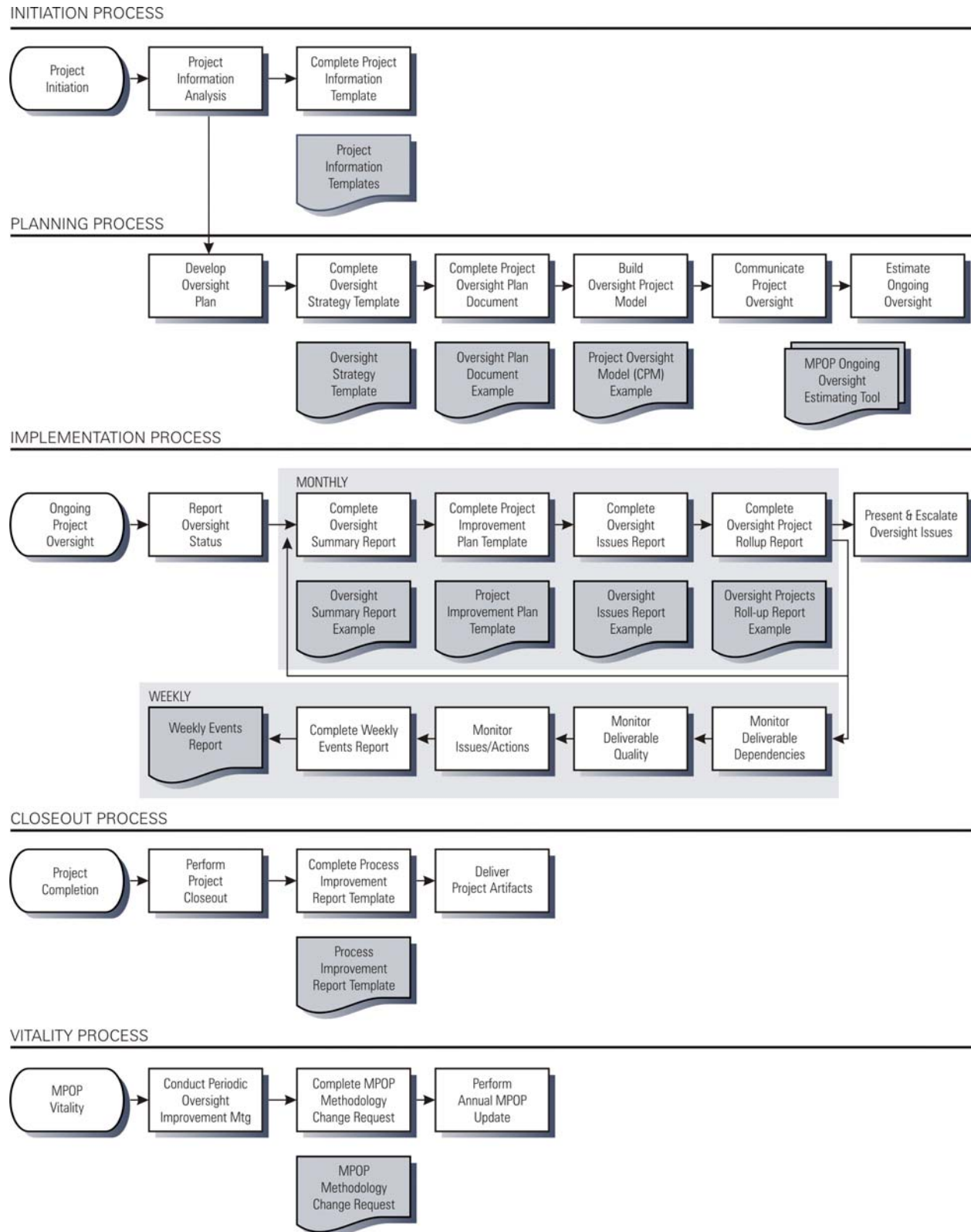


Figure 5. Oversight Process and Templates

Oversight Initiation Process

The Oversight Initiation Process has the primary objective of ensuring that the oversight manager gains a strong understanding of the project and its potential risk areas. To make this possible this process includes the accumulation of project documentation that is to be used throughout the life of the project. Included is an initial identification and analysis of critical project information, resulting in an understanding of the project risks. The oversight methodology relies on this information and analysis to identify and configure the oversight toolset.

Oversight Planning Process

Planning is critical to the success of any endeavor and project oversight is no exception. The Oversight Planning Process starts with the development of an oversight strategy and an oversight plan, each of which are key products derived using the results of the analysis of project information obtained during the Oversight Initiation Process. It also involves perhaps the most important step of the methodology, development of the Oversight Project Model (OPM). The OPM is the key tool used during the Oversight Implementation Process.

After some adjustments to the methodology, Project Oversight provided us a valuable tool to monitor progress

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All oversight information, tools, and plans are communicated to the project team and the oversight committee to ensure a clear understanding of the role that oversight will play during the project. Additionally, prior to communicating the Project

Oversight Plan, the analysis performed in the Oversight Initiation Process is used to complete an estimate of effort for the Implementation and Closeout phases of oversight. An introduction to the process of estimating ongoing oversight and an example of the estimating tool is covered in the final section of this document and detailed in full in Part II of the MPOP manual.

Oversight Implementation Process

The Oversight Implementation Process is the central process to the entire methodology. The implementation activities include the continuous monitoring of project performance, quality, and issues using the OPM. It also involves the reporting functions needed for communications of project health throughout the project lifecycle.

Oversight Closeout Process

The Oversight Closeout Process is the final process performed after final system implementation and completion of the project. It is designed to promote constant process improvement for the oversight methodology, the agency IT organization, and other affected Missouri IT programs. It helps to ensure that Missouri will continuously improve its IT programs, which in turn improves the quality of its IT systems.

Oversight Vitality Process

The Oversight Vitality Process is required to maintain the currency of the Missouri Project Oversight Program. The Oversight Vitality Process involves routine collaboration and communications between Project Oversight Managers and OIT to review and document potential changes to the MPOP. The Oversight Vitality Process ensures the actual implementation of the process improvements and their inclusion in the annual update to the MPOP manual.

ESTIMATION OF ONGOING OVERSIGHT

Recognizing that every IT Project is unique, the Missouri Project Oversight Program (MPOP) will not attempt to deploy a ‘canned’ implementation approach that meets the needs of every agency or every project. All projects requiring oversight will vary in degrees of size and complexity; factors which directly impact the formality of oversight documentation, the frequency of oversight reviews and oversight communications. The identification of the appropriate level of effort associated with ongoing project oversight is critical to ensuring that the proper process and reporting formalities are applied.

In order to assist in the estimation of the effort required for the Implementation and Closeout phases of Oversight, a formal toolset has been developed that uses analysis from the Initiation and Planning processes to automate the calculation of ongoing oversight. The toolset is based on fundamentally sound factors derived from the experiences of Oversight Mangers involved in Missouri oversight engagements. The toolset consists of two interlinked worksheets:

- Project Ratings Worksheet
- On-Going Project Oversight Worksheet

The following sections provide an introduction to these worksheets; the detailed process and procedures used to operate these tools is included in MPOP: Part II, Chapter 2 – The Oversight Planning Process.

Project Ratings Worksheet

The Project Ratings Worksheet provides an overall rating of the project using specific characteristics in three (3) categories: Project Size, Project Solution Complexity, and Project Team Experience. Each of these categories is assessed according to parameters that effectively provide the project’s ranking as associated with each category. The following table summarizes the parameters assessed per category:

Table 2. Project Ratings Parameters

PROJECT SIZE	Project Budget
	Project Schedule/Duration
	Number of State of Missouri organizations involved
	Amount of external influence or impact to State of Missouri citizens
	Organizational priority/mission criticality of project
PROJECT SOLUTION COMPLEXITY	Complexity of calculations, logic and mathematical algorithms
	Complexity of data and data relationships
	Complexity of GUI views and navigation
	Complexity of Applications Architecture
	Complexity of Transaction Processing/required response times
	Amount and Complexity of Interfaces
PROJECT TEAM EXPERIENCE	Amount of involvement of Subject Matter Experts
	Formality of Business Process definition and documentation
	Formality of Project Management processes and documentation
	Formality of IT methodologies and standards
	Stakeholder buy-in and comfort
	Overall maturity of IT organization responsible for solution

Once the ratings for the parameters and categories included in the Project Rating Worksheet are confirmed, the scoring is totaled to arrive at overall ratings factors for project size, complexity and team experience. These overall ratings factors are linked into the On-Going Project Oversight Worksheet to finalize the calculated level of oversight effort required for the project. A snap-shot of the Project Ratings Worksheet is included at the end of this document.

On-Going Project Oversight Worksheet

After completing the Project Rating Worksheet, the estimating process can be completed by using the On-going Project Oversight Worksheet. The project size, complexity and team experience figures are linked into the On-Going Project Oversight Worksheet as the variable multiplication factors used to generate a monthly needs forecast for ongoing project oversight.

The On-Going Project Oversight Worksheet also uses several fixed multiplication factors in its calculations including factors for review time, project management time and contingency. The worksheet provides the capability to estimate up to twelve months of effort. To accommodate projects of longer duration either the worksheet would need to be modified or multiple worksheets would have to be completed to capture the longer project duration.

A screen shot of the On-Going Project Oversight Worksheet is included at the end of this document.

Project Oversight - Project Rating Worksheet											
Project Size:			Project Solution Difficulty			Project Team Experience:			Project Team Ratings		
Group 1			Group 1			Group 1					
	Budget of less than \$1 Million	0		Simple logical algorithms	0		Dedicated involvement of Senior Subject Matter Experts (full-time project resources)		0		
	Schedule is less than a year in duration	0		Simple data relationships	0		All Business Process well defined and documented		0		
	Single organization/entity	0		Simple GUI (Text Based, Limited set of screens)	0		Management Process well defined, documented and practiced – Certified Project Managers		0		
	No external influences (in-house project)	0		Simple Application Architecture (Monolithic, or pure Client/Server)	0	X	Robust IT methodologies/Standards in place and in practice		1		
	Lowest organizational priority, non-mission critical	0		Simple Transaction Processing (Largely batch, limited OLTP)	0		Buy-In of all stakeholders, executive management to project		0		
				No external system interface			Highly mature IT organization – significant experience with large scale projects				
Total of Group 1 Ratings			0	Total of Group 1 Ratings			0	Total of Group 1 Ratings			1
Group 2			Group 2			Group 2					
X	Budget of \$1-3 Million	2	X	More complex nested algorithms , multiple calculations including multiplication/division in series	2	X	Involvement of Senior Subject Matter Experts (Part-time project resources)		2		
X	Schedule is 1 to 2 years in duration	2		Multidimensional data relationships	0	X	Most Business Process well defined and documented (some refinement required)		2		
	Less than 5 organizations/entities involved – team schedule coordination	0		More complex GUI (More screens, screen navigation)	0	X	Management Process defined and documented, not fully practiced on all projects, Management trained and/or Certified		2		
	Few external influences (legal or political mandates)	0		Moderate Application Architecture (3-Tier)	0		Defined IT methodologies in place, many standards, not always in practice		0		
	Low organizational priority, non-mission critical	0	X	Increased Transaction Processing (Split between batch and on-line)	2	X	Buy-in of most stakeholders, executive management to project		2		
			X	Minimal external system interfaces (<3)	2	X	Mature IT organization – experience with large scale projects		2		
Total of Group 2 Ratings			4	Total of Group 2 Ratings			6	Total of Group 2 Ratings			10
Group 3			Group 3			Group 3					
	Budget of \$3-5 Million	0		Complex nested algorithms, Fuzzy logic/Expert Systems/Decision Support Capabilities	0		Involvement of Available Subject Matter Experts (Part-time project resources)		0		
	Multi-year project schedule	0	X	Multidimensional and relational data relationships with significant number of attributive and associative relationships	3		Some Business Process well defined, limited documentation (refinement required)		0		
X	5 to 7 organization/entities involved – team schedule coordination	3	X	Increased GUI (Multiple views, navigation paths)	3		Management Process defined, limited documentation, not fully practiced, Management trained and/or Certified		0		
X	Multiple external influences (legal, political, constituents)	3	X	More complex Application Architecture (N-tier, web-based forms/fields, supports for standard industry accepted browsers)	3		Few IT methodologies in place, some standards, compliance suspect		0		
	Medium organizational priority, some mission critical functions	0		Significant Transaction Processing (Mostly real-time, some batch, performance constraints)	0		Buy-in of most stakeholders, executive management to project – some skepticism		0		
				Multiple external system interfaces (3 to 7)	0		Maturing IT organization – experience with small to medium scale projects		0		
Total of Group 3 Ratings			6	Total of Group 3 Ratings			9	Total of Group 3 Ratings			0
Group 4			Group 4			Group 4					
	Multi-million dollar budget	0		Extremely complex logical and mathematical algorithms typically seen in telecommunications, real-time automated process control, navigation systems	0		Limited involvement of qualified Subject Matter Experts (Part-time resources)		0		
	Multi-year project schedule	0		Extremely complex data	0		Some Business Process defined, little documentation (major refinement required)		0		
	7 to 10 organizations/entities involved – requires significant coordination	0		Complex GUI (View personalization, portal capabilities)	0		No formal Management Process defined, Management has some formal training		0		
	Significant external influences (legal, political, constituents, public facing)	0		Complex Application Architecture (Web-based Applets – Java, E-Business, maintaining user-states, broad browser support)	0		Few IT methodologies in place, few standards, no formal compliance		0		
X	High organizational priority, multiple mission critical functions	4		Heavy Transaction Process (Real-time across multiple systems, SLAs)	0		Limited buy-in of most stakeholders, executive management to project – some opposition, skepticism		0		
				Multiple external system interfaces (7 – 15 between non-homogeneous systems)	0		Immature IT organization – experience limited to small/medium scale projects		0		
Total of Group 4 Ratings			4	Total of Group 4 Ratings			0	Total of Group 4 Ratings			0
Group 5			Group 5			Group 5					
	Multi-million dollar budget, multiple funding sources	0		Event driven outputs occur simultaneously with inputs (nanosecond response) , critically timed, continuous calculations	0		Involvement of minimally qualified Subject Matter Experts (Part-time resources)		0		
	Multi-year project schedule	0		Data stored in buffer areas or queues, processed based on priority - demanding memory, timing and communications constraints	0		Very few Business Process defined, no documentation (major definitions required)		0		
	More than 10 organizations/entities involved – requires significant coordination	0		Very Complex GUI (requires significant training, coordination of manual/automated processes)	0		No formal Management Process defined, Inexperience Management		0		
	Highly-visible external influences (legal, political, constituents, public facing)	0		Highly Complex Application Architecture (heavy distribution of processes across multiple servers/platforms)	0		Few IT methodologies in place, no formal standards, no formal compliance		0		
	High organizational priority, entire project is considered mission critical	0		Heavy Transaction Process (Real-time across multiple systems, SLAs) - requires 99.999% uptime	0		Limited buy-in of most stakeholders, executive management to project – significant opposition, skepticism		0		
				Multiple, Complex external interfaces (>15 between non-homogeneous systems across multiple geographic barriers)	0		Very immature IT organization – experience limited to small projects		0		
Total of Group 5 Ratings			0	Total of Group 5 Ratings			0	Total of Group 5 Ratings			0
Total of All Ratings			14	Total of All Ratings			15	Total of All Ratings			11
Total Categories Rated			5	Total Categories Rated			6	Total Categories Rated			6
Overall Variable Multiplication Factors Rating			3	Overall Variable Multiplication Factors Rating			3	Overall Variable Multiplication Factors Rating			2

Figure 6. Project Ratings Worksheet

On-Going Project Oversight Estimate for <u>Project ABCDEFG</u>												
Fixed Multiplication Factors			Variable Multiplication Factors				Project Rating Multiplication Factors					
Review Factor	45%		Variable Factors		Rating	Multiplier	1	2	3	4	5	
Post-Review Updates Factor	20%		Project Size		3	1.000	0.930	0.965	1.000	1.035	1.070	
Contingency Factor	20%		Project Solution Difficulty		3	1.000						
Project Management Factor	10%		Project Team Experience		2	0.965						
							Hours Per Month					
							20	5	5	2	2	
Task	Subtask	Project Duration in Months	Analysis/ Document	Monthly Management & Committee Review	Post-Review Updates	Total	OPM Maintenance	Oversight Plan Maintenance	Weekly Events Report	Project Management Support	Telephone Support	
Task Name												
On-Going Oversight	Month 1	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 2	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 3	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 4	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 5	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 6	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 7	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 8	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 9	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 10	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 11	x	34.000	15.300	6.800	56	1	1	1	1	1	
On-Going Oversight	Month 12	x	34.000	15.300	6.800	56	1	1	1	1	1	
							Project - Total Events					
Contingency			81.600	36.720	16.320	135	12	12	12	12	12	
Project Management			48.960	22.032	0	71						
Subtotal			538.560	242.352	97.92	879						
Project Size			538.560	242.352	97.920	879	Date:		MM/DD/YYYY			
Project Solution Difficulty			538.560	242.352	97.920	879	Version:		1.0			
Project Team Experience			519.710	233.870	94.493	848						
Total Project Oversight Hours							848					

Figure 7. On-Going Project Oversight Worksheet